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*Variation and Change in Morphology. Selected papers from
the 13th International Morphology Meeting, Vienna, February 2008*

VARIATION AND CHANGE
IN MORPHOLOGY

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Edited by

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The invisible hand of grammaticalization

West-Germanic substitutive infinitive and the prefix *ge-**

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Grammaticalization may have therapeutic and pathological effects on morphology. The paper will focus on these latter with special regard to the occurrence of a morpheme in an unexpected form as is the case for the West-Germanic substitutive infinitive. The reason for this mysterious case of form-meaning mismatch must be sought in the grammaticalization of the Germanic telic prefix **ga-*. As a consequence of its grammaticalization in the past participle, a semantic incompatibility prevented the so-called Acl-verbs from being touched by the grammaticalization wave spreading the perfect periphrasis throughout the whole verbal system. Thus, the arguably default form came in, namely the infinitive, whereby the perfect periphrasis could be completely paradigmaticized even though at the cost of a form/meaning mismatch. In this light, the long-wave effect of grammaticalization can be made responsible for the anomaly preserved until today in all West-Germanic dialects, in which *ge-* was grammaticalized as an inflectional marker.

1. Introduction

What is the impact of grammaticalization on morphology? Basically, a therapeutic one: Grammaticalization is generally responsible for the increase of iconicity (cf. Bybee 2006). For instance, in Old English, the same form *full* could be used both as an adjective and as an adverb. After the grammaticalization of *līc* 'body' as the adverb-forming suffix *-ly*, iconicity was increased because of the actual explicit coding of the derivational relation between the basic adjective *full* and the derived adverb *fully*.

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On the other hand, pathological effects can be observed: Dysfunctional morphological structure comes about which violates general and/or language-specific morphological principles (cf. Gaeta 2008). In other words, grammaticalization may give rise to mismatches, which can be defined as “synchronic form/meaning discrep[anc]ies”, in which form-function mappings are incongruent with respect to more general patterns of correspondence in the language” (Francis & Michaelis 2003: 2).

In the rest of the paper, several different cases of form/meaning mismatch will be discussed. In particular, the so-called substitutive infinitive occurring in German as well as in other West-Germanic languages will be focused on, with the aim of showing that this quirky feature may be explained as a side-effect of the grammaticalization of the perfect periphrasis in the Middle Ages. The paper is structured as follows: Section 2 provides a survey of different cases of form/meaning mismatches which can be explained as the result of grammaticalization, while Section 3 introduces the historical background which is necessary for understanding the rise of the substitutive infinitive. The latter will be explained in Section 4 as the peculiar expansion of the perfect periphrasis to a particular verb class, namely to verbs governing a bare infinitive. The final Section 5 draws the conclusion.

2. Form/meaning mismatches in morphology

A first type of form/meaning mismatch is given by the appearance of a certain form in the “wrong” place. “Trapped” morphology comes about as a consequence of grammaticalization (cf. Harris & Faarlund 2006). Accordingly, a morpheme turns out to be “trapped” by the grammaticalization of another morpheme. For instance, in Old Norse the inflectional marker *-s* was “trapped” in a dispreferred position and subsequently eliminated in Norwegian:

- (1) ON *hest-s* = *in-s* > Norw. *hest-en-s*
 horse-GEN = the-GEN
 “the horse (gen.)”

Similarly, introflection came about in Latin as a consequence of the grammaticalization of markers like *-pse* and *-dam* (cf. Haspelmath 1993):

- (2) a. *+is-pse/ea-pse* ‘self’ > *ipse, -a, -um*
 eum-pse/+eam-pse > *ips-um, -am*
 +eō-pse/eā-pse > *ips-ō, -ā*
- b. NOM. *quī-dam/quae-dam* ‘a certain one’
 GEN. *cuius-dam*
 DAT. *cui-dam*
 ACC. *quen-dam/quan-dam*
 ABL. *quō-dam/quā-dam*

Notice that only in the first case a morphological change, called externalization of inflection by Haspelmath, has eliminated introflection, while in the second case the mismatch was preserved.

A second type of form/meaning mismatch is given by the appearance of an unexpected form for a given bundle of morphosyntactic features. This usually comes about as a result of the expansion/paradigmaticization of a certain grammaticalized construction. In some Russian dialects, the grammaticalization of the perfective periphrasis has given rise to a sort of split alignment, because the possessive construction which is at the origin of the perfective periphrasis contained a non-nominative subject (cf. Creissels 2008: 25):

- (3) a. *U Ivana novaja mašina.*
 at Ivan:GEN new:SG:F:NOM car: SG:NOM
 “Ivan has a new car.”
- b. *U volkov s’edeno korovu.*
 at wolf:PL:GEN eaten:SG:N COW:SG:ACC
 “The wolves have eaten the cow.”

On this background, the rest of the paper will be devoted to discussing a particularly intriguing case of synchronic mismatch, namely the so-called substitutive infinitive (= IPP, *Infinitivus Pro Participio*) occurring in several West-Germanic languages like Modern Standard German (= MSG), Dutch, West Flemish, Afrikaans (cf. Schmid 2005), and exemplified below by MSG:¹

- (4) a. *Ulli hätte die Morphologie-Tagung nicht besser organisieren können.*
 Ulli had the morphology meeting not better organize:INF can:INF
 “Ulli couldn’t organize better the morphology conference.”
- b. **Ulli hätte die Morphologie-Tagung nicht besser organisieren gekonnt.*
 Ulli had the morphology meeting not better organize:INF can:PSTPTCP
- c. *Ulli hätte es gekonnt.*
 Ulli had it can:PSTPTCP
 “Ulli could do it.”

Similar to the Russian dialects mentioned above, the mismatch is given here by the appearance of an unexpected infinitive for what should have been a past participle. Notice that the latter is indeed attested, when the modal is used as a full verb, as shown in (4c).

1. Since a lot of individual and regional variation occurs, the label MSG refers to the standard variety as usually described by reference grammars like for instance DUDEN (2005: 473).

Besides modals, the IPP occurs in MSG optionally with causative and perception verbs:

- (5) a. *Ulli hat den Wagen kommen sehen/gesehen.*
 Ulli has the car come:INF see:INF/see:PSTPTCP
 "Ulli has seen the car coming."
 b. *Ulli hat den Wagen kommen lassen/gelassen.*
 Ulli has the car come:INF let:INF/let:PSTPTCP
 "Ulli has got the car to come."

Several explanations have been suggested for understanding the IPP and more generally the character of the West-Germanic verbal complex (cf. Gaeta 2005 and Wurmbrand 2006 for overviews of respectively diachronic and synchronic approaches); however, a satisfactory "answer to the question of what the (deep) motivation of verb cluster formation is and why this phenomenon only exists in certain languages is still outstanding" (Wurmbrand 2006: 234).

In what follows, it will be shown that far from being a quirky character of the West-Germanic verb complex, this mismatch has to be seen as a side-effect of the grammaticalization of the perfect in the late Middle Ages, in consequence of the special role played by the telic prefix *ge-* of the past participle.

3. The *ge-* prefix and the perfect periphrasis

Two important facts can be observed at the *Jahrtausendwende* in Continental West-Germanic:² the grammaticalization of the *ge-* prefix as an inflectional marker in the past participle, and the grammaticalization of the perfect periphrasis. Both facts are fairly complex and call into play different properties as well as domains.

The prefix *ge-* played a crucial role in the history of the West-Germanic languages: in Proto-Germanic, it is generally reconstructed as a proclitic marker of telicity (or "perfectiveness" for Lowe 1972: 223), as shown by forms like Gothic *ga-nisan* 'to be cured', being related to Latin *cum*, Old Irish *com-*, Albanian *kë*, etc. In the West-Germanic languages, the prefix *ge-* is ever since attested as an additive marker of the past participle forming a sort of circumfix, as it is still the case in MSG *geschlafen* and Dutch *geslapen* 'slept (pstptcp.)'. However, its telic value was

2. In what follows, Old English is intentionally left aside: although similar phenomena are attested, the partially different conditions and the strong Romance influence after the battle of Hastings render the case of Old English much more complex than what can be dealt with here. See at least Wischer & Habermann (2004) for the prefix *ge-* in Old English, and Fischer (1994) for the development of the infinitival complementation.

not lost, at least in the earlier stages. In fact, in Old High German (= OHG) the prefix was not compatible with intrinsically telic verbs like the following ones (cf. Braune/Reiffenstein 2004: 273):

- (6) *bringen* 'bring' → *brungan/brāht* '(pstptcp.)'
findan 'find' → *fundan* '(pstptcp.)'
quëman 'come' → *quëman/quoman* '(pstptcp.)'
trëffan 'hit' → *troffan/(gitroffan)* '(pstptcp.)'
wërdan 'become' → *wortan/(giwortan)* '(pstptcp.)'

This does not surprise given the intrinsic telic value of the prefix, which makes it highly redundant with telic verbal bases. In other words, the grammaticalization process leading to the expansion of *ge-* throughout the entire verbal system as observed in MSG was not yet completed. Notice that in Middle High German (= MHG) this restriction still holds (cf. Paul et al. 2007: 247):

- (7) MHG *brāht* MSG *gebracht*
finden *gefunden*
komen *gekommen*
troffen *getroffen*
worden *(ge)worden*

The grammaticalization of the prefix *ge-* as an inflectional marker was not only incomplete, thus giving rise to inconsistencies across the verb paradigms, but also accompanied by the phenomenon of layering, namely "the persistence of older forms and meanings alongside newer forms and meanings, whether derived by divergence from the same source or by renewal from different sources" (cf. Hopper & Traugott 2003: 124). In fact, *ge-* could be generally prefixed to verbs giving rise to aspectually distinct pairs, as shown below with the help of AcI-constructions:

- (8) OHG *sehan* 'see' / *gisehan*:
 a. *thar sah si drúhtin stantan* (Otf., Ev. 5.7. 44)
 there saw she lord stand:INF
 "She saw the lord standing there."
 b. *thar gisah er stantan gotes boton sconan* (Otf., Ev. 1.4.21)
 there gi-saw he stay:INF god's messenger beautiful
 "He came to see god's beautiful messenger standing there."

OHG *hören* 'hear' / *gihören*:

- c. *then fater hort er sprechan* (Otf., Ev. 1.25.15)
 the:ACC father heard he speak:INF
 "He heard the father speaking."
 d. *ik gihorte dat seggen ... (Hld. 1)*
 I gi-heard this say:INF
 "I came to hear saying this, ..."

Notice that the usage of the prefixed companion with the AcI-construction forces an ingressive interpretation in (8b) (cf. Schrodtt 2004: 125).³ As for the example of *gihören* in (8d) above, the verse is the very beginning of the *Hildebrandlied*.

It must be emphasized that AcI-verbs constituted a particular verb class, which required as a necessary condition for the AcI-construction to be possible the simultaneity between the two events conveyed by the predicates. In other words, the two events had to be interpreted as at least partially overlapping.⁴

The class mainly contained perception and causative verbs; however, an extension to other verb classes (saying, thinking verbs, etc.) took place quite soon under Latin influence (cf. Speyer 2001). In this light, the usage of the aspectually marked verbs prefixed by *gi-* was only possible on condition that the first event had not to be interpreted as closed with respect to the second one. Accordingly, the pairs reported in (8) above display an ingressive meaning.

This prefixal usage of *ge-* is still highly productive in MHG, as can be gathered from the following table (cf. Solms 1991: 125), which shows the distribution of certain verbal prefixes in OHG and MHG texts:

Table 1. Distribution of verbal prefixes in OHG and MHG

	<i>ge-</i>	<i>ent-</i>	<i>er-</i>	<i>be-</i>	<i>ver-</i>	<i>zer-</i>
OHG <i>Abrogans</i>	28,3%	4,3%	19,2%	27,4%	15,5%	5,3%
MHG <i>Iwein</i> MS A	33,8%	6,3%	18,8%	18,8%	21,3%	1,1%
MHG <i>Gregorius</i> MS A	32,1%	7,3%	19,4%	21,9%	20,8%	2,2%

In particular, the prefixed companion was used to convey future and pluperfect meaning still in MHG:

3. Schrodtt (2004: 113) distinguishes between an ingressive and an egressive aspect: they both realize the “complexive” dimension, which generally represents a bounded futural event. The opposition between the prefixed and the prefixless verb allows one to distinguish “die wichtigeren Begebenheiten im Bericht von den weniger wichtigen ..., die ihrerseits in der konstatierenden Aspektfunktion mittels des Simplex erscheinen” (Schrodtt 2004: 126). I will not go further into the rather complex picture depicted by Schrodtt, also because I am aware of the large amount of theoretical and terminological differences to be found in studies on tense and aspect. I will limit myself to speaking of telicity (or boundedness) as for the actional/aspectual dimension, and of anteriority/posteriority for the temporal dimension.

4. Notice that this condition still holds for MSG:

*Den Vater hörte er sprechen / *gesprochen haben.*
the father heard he speak/ spoken have:INF

- (9) a. Future (cf. Paul et al. 2007: 289):

ich weiz wol waz Kriemhilt mit disem scatze getuot
I know well what K. with this treasure *ge-*does
“I well know what Kriemhilt will do with this treasure.”

- b. Pluperfect (cf. Paul et al. 2007: 290):

als der künic Gunther die rede wol sprach, Hagene
when the king G. the discourse well *ge-*spoke, H.

der küene den guoten Rüedegêren sach.
the clever the good R. saw

“When the king Gunther had finished his discourse, the clever Hagen saw the good Rüedegêren.”

Thus, the prefix *ge-* was a key marker of telicity for verbs during the whole Middle Ages, being layered in different but homogeneous usages.

In the same time span, namely in late OHG/early MHG, the grammaticalization of the perfect periphrasis also took place (cf. Kotin 1997; Harris 2003). In classical OHG, a sentence such as the following one displayed a biclausal structure, in that the verbal complex had a resultative reading and an agreement marker on the past participle occurred. Furthermore, it was only possible with transitive verbs, which allowed for a possessive reading:

- (10) *iogiuuelich, thie thar gisihit uuib sie zi geronne, iu habet sia*
whoever who there *gi-*sees woman her to lust he has her
forlegana in sinemo herzen (Tat., *Ev.Harm.* 28.1)
enclosed in his heart

“Whoever will see a woman in order to lust after her, he’ll have already got her enclosed in his heart.”

In late OHG, beginning with the 11th century, the same construction may be considered grammaticalized, thus forming a monoclausal sentence with the addition of temporal reference, namely anteriority:⁵

- (11) a. *dáz chit síben búohlísto. die unmánige gelírnet hábent.*
this means seven arts which un-many learned have
únde áber mánige genémnen chúnnen (Not. I.65.3–4)
and but many *gi-*name:INF can

“This means the seven arts, which many have studied, but only few are able to mention.”

5. In more formal terms, we can say that the grammaticalized auxiliary *haben* provides a further temporal interval which allows the past participle to release its referential potential. Notice that in the case of the AcI-construction, the second temporal interval of the perception or causative verb, i.e. its second argument-time window, is saturated by the embedded verb (cf. Klein 2000; Gaeta 2008 for details).

- b. *dinen zörn fürhtendo hábo ih ... geuuéinot* (Not. 3.14.10, Ps. 6)
 your anger fearing have I cried
 "Fearing your anger I have cried."

Furthermore, we observe the complete loss of any agreement on the participle, and, more significantly, the expansion to other verb classes, and in particular to intransitives (cf. Kotin 2000: 332), as shown by (12b).

4. The IPP and the expansion of the perfect periphrasis in MHG

What is the place of the IPP in the necessarily sketchy picture depicted so far? Before looking at the historical evidence available, let us speculate on the role which has to be attributed to the IPP in this scenario.

The main thesis which I would like to defend is that the IPP has to be seen as a side-effect of the grammaticalization of the perfect in the late Middle Ages, a consequence of its expansion to all possible verb sets. In this light, the mismatch is motivated by the semantic incompatibility of the past participle with the AcI-construction. The incompatibility is due to the special role played by the prefix *ge-* of the past participle, which, as we have seen, is intrinsically telic (for a partially similar view, see also Ijbema 1997: 152). Therefore, it provides an obstacle for the expansion of the perfect periphrasis to the AcI-construction, because the latter requires a partial overlapping of the two events encoded. The crucial point is that the perfect periphrasis as such is theoretically compatible with the AcI-verbs, because it conveys temporal reference of anteriority, which can be predicated of the first event of the AcI-construction. The problem is, however, that the past participle is also marked as telic by the prefix *ge-*, which is incompatible with the AcI-construction, unless an ingressive reading is forced, as we have seen above.⁶ The latter is in its

6. An anonymous reviewer questions whether the semantic incompatibility of the *ge-*prefixed participle should be the right explanation here in the light of the acceptability of sentences like *Karl sah ihn geschlagen* 'Karl saw him knocked down', which contains a past participle depending on a perception verb. However, such structures cannot be assimilated to AcI-constructions because no infinitive occurs, which is crucially specified for simultaneity with the perception verb. In fact, the telicity effect only arises when the participle is forced to govern an embedded infinitive specified for unboundedness. When no simultaneity is required, the past participle shows up instead of the IPP: *Karl hat ihn geschlagen gesehen* / **sehen* 'Karl has seen him knocked down'. Notice that such constructions can be assimilated to those in which a past participle modifies a noun, which are impossible with unergative verbs: *der geschlagene Riese* 'the giant knocked down' vs. **der geschlafene Riese* 'lit., the slept giant'. As

turn incompatible with the perfect periphrasis. To overcome the obstacle represented by the prefixed participle, the infinitive, as a default form (cf. Eisenberg, Smith & Teuber 2001: 256), replaced the participle, thus allowing the extension of the perfect to the AcI-verbs. The construction did convey anteriority of the first event with respect to the speech time, while at the same time the infinitive was not intrinsically marked for boundedness.

In spite of the apparently speculative character of this hypothesis, a number of tight predictions logically result from it. Firstly, the IPP should appear concomitant with the extension of the perfect construction to complex verb structures. Thus, we wouldn't expect the IPP to appear immediately after the grammaticalization of the perfect periphrasis. Instead, because of the obstacle represented by the prefixed participle, a delayed expansion is predicted. Secondly, the complex verb structures affected earlier by the IPP should be well characterized as for their aspectual/actional composition. This would reveal the role played by the aspectual/actional properties of the involved predicates. Finally, the infinitive should be used as a default form in other verbal periphrases as well in the same time span. Let us see if these predictions are supported by the historical evidence.

As to the first prediction, the IPP is first attested in the 13th century, two centuries after the grammaticalization of the perfect periphrasis:

- (12) a. *hâst₁ du daz schif lâzen₂ gân₃* (Trist. 6796–7)
 have:2 SG you the boat let:INF go:INF
 "You left the boat go away."
 b. *daz er die brieffe nit habe₁ heissen₂ machin₃* (Publ. 615.31)
 that he the letters not have order:INF make:INF
 "that he did not order to prepare the letters"

These examples, and the others collected by Kurrelmeyer's (1910) thorough investigation of the first attestations of the IPP, are interesting from a double viewpoint. On the one hand, they show that MHG prevalently behaves like Dutch as for the linearization of the constituents, namely $V_1 V_2 V_3$. We will come back to this point later. On the other, modal verbs, which categorically require IPP in MSG, were scarcely attested, whereas causative and perception verbs

expected, unergatives are incompatible: **Karl hat ihn geschlafen gesehen* 'lit., Karl has seen him slept'. Furthermore, unaccusatives pattern with transitives: *der vom Mars gekommene Riese* 'the giant come from Mars' and *Karl hat ihn ins Zimmer gekommen gesehen* 'lit., Karl has seen him come (pstptc.) into the room'. See Klein (2000) and Gaeta (2008) for more details.

were robustly attested. The following table summarizes the data collected by Kurrelmeyer (1910):

Table 2. The earliest attestations of IPP in MHG

Word order	13th c.		14th c.	
	V ₁ V ₂ V ₃	V ₁ V ₃ V ₂	V ₁ V ₂ V ₃	V ₁ V ₃ V ₂
causatives				
<i>tuon</i> 'do'	6		10	
<i>lāzen</i> 'let'	8	1	4	1
<i>heizen</i> 'order'	10		12 (PP = 12)	
modals				
<i>müezen</i> 'may'	1		1	
<i>türren</i> 'dare'			1	
<i>mügen</i> 'be able to'				(PP = 1)
<i>wellen</i> 'want'				
<i>künnen</i> 'understand'				
<i>dürfen</i> 'need'				
perception verbs				
<i>hæren</i> 'hear'	8 (PP = 1)		11	
<i>sēhen</i> 'see'			1 = V ₃ V ₁ V ₂ (PP = 2)	
benefactives				
<i>helfen</i> 'help'	1		1	

Although sparse forms of the expected past participles are attested (indicated by PP in the table),⁷ the dominant type is given by the IPP, mainly with causative and perception verbs. Thus, the historical findings project a picture which is very different from what we observe today: whereas in MSG (and Dutch) modals categorically display the IPP, in its earlier stage the IPP occurred in a systematic way only with the core set of the AcI-verbs, namely perception and causative verbs. Far from being unexpected, this fact fits very well into the scenario depicted so far, and actually fulfills the second prediction formulated above. In fact, modals do not require the condition on simultaneity which we have observed above for

7. The only exception is given by the significant occurrence of the past participle of *heizen*, which has been used to support the traditional view that explained the IPP as a consequence of the confusion between the formally identical infinitive and past participle: *heizen/geheizen* (cf. Grimm 1837: 168). In the light of the robust occurrence of cases in which no identity occurred like *tuon/getān*, *hæren/gehært*, this view can be definitely rejected.

AcI-verbs, and as expected were commonly used in MHG in combination with the perfect periphrasis:⁸

- (13) *daz möht ir gerne hân verdagt* (Parz. 464.6)
 this could you willingly have be-silent:PSTPTCP
 "You could have been silent about this with pleasure."

Thus, the apparently odd distribution of the IPP in MHG can be straightforwardly explained by the peculiar character of modals which allow for a less restricted combination of the embedded predicate. In those cases in which the combination was tighter and required an overlapping of the two events, namely with perception and causative verbs, this escape solution was not available, namely expressing anteriority on the embedded predicate, and the IPP manifested itself.

As for third prediction formulated above, namely the infinitive as the available default form, notice that the infinitive was generally being extended in the 13th and the 14th centuries to other verbal periphrases as well:

- (14) a. *tuon* + infinitive periphrasis (Paul et al. 2007: 308):
die lieb sich meren tuot
 the love itself enlarge:INF does
 "The love does enlarge itself."
- b. *würde* + infinitive periphrasis for the past subjunctive (cf. Ebert et al. 1993: 392):
mit dem Turcken vnd Frantzose dis jar so stehen wurde
 with the Turk and Frenchman this year so stand:INF would
 "This year it would be like so with the Turk and the Frenchman."
- c. *werden* + infinitive periphrasis for the future (cf. Paul et al. 2007: 296):
daz wirt er eine klagen
 that will he one lament:INF
 "That he will lament one."

This last usage is particularly significant for our purposes, because the future periphrasis also came to display the same options of the IPP as for the linearization

8. In this regard, consider Grønvik's (1986: 46) comment: "Daß Perfektformen von modalen Hilfsverben im Mhd. nicht auftreten, rührt also daher, daß man die Perfektbedeutung nicht am Hilfsverb, sondern am Hauptverb ausdrückte" [Thus, that forms of the perfect of modals did not occur in MHG depends on the fact that the perfect meaning was expressed not by the modal, but by the main verb]. Again, MSG confirms this insight:

Hans könnte kommen/ gekommen sein. 'Hans could have come'
 Hans could come:INF come:PSTPTCP be.

of the constituents (cf. Kotin 2003 for a detailed reconstruction of the origin of the *werden* + infinitive periphrasis):

- (15) *Ulli glaubt, dass seine Frau ruhig wird /hat schlafen können.*
U. thinks that his wife quietly becomes /has sleep:INF can:INF
“Ulli thinks that his wife will be able to/could sleep quietly.”

Two further independent arguments support the analysis laid down here: the global picture of (West-)Germanic languages and the restrictions still displayed by the past participle in the modern languages.

As for the global picture of (West-)Germanic languages, it must be stressed that the IPP is only attested in those (West-)Germanic languages, in which *ge-* was grammaticalized as a marker of the participle (cf. Abraham 1998: 109), as illustrated by two other varieties, namely Frisian and Low German, which do not display the *ge-*prefix. Expectedly, the IPP does not show up:

- (16) Frisian: *dat er it boek leze kind hat*
Low German: *dat he dat book lesen kunnt het*
that he the book read can:PSTPTCP has
“that he could read the book”

However, two exceptions have been pointed out which disturb this water-tight picture, namely West Frisian dialects, which display prefixless participles and the IPP, and Yiddish which is its mirror-image, showing prefixed participles and the IPP:

- (17) a. West Frisian dialects (prefixless participles and IPP):
dat er it hat kinne dwaan
that he it has can:INF do
“that he could do it”
b. Yiddish (prefixed participles and IPP):
Zey hobn gemuzt zikh fartejdikn
they have must:PSTPTCP themselves defend
“They had to defend themselves.”

However, it must be noted that strong language contact was at play in both cases, which might have influenced the reshaping of the verbal complex on the basis of Dutch (for West-Frisian dialects), or the normalization of the structure (for Yiddish). Notice that normalized structures are also attested in the diachrony of German, which corresponds to more general normalization tendencies witnessed by Paul (1920: 128–129):

“Ausnahmsweise Verwendung des Part. der genannten Verba in der neueren Sprache ist wohl immer nicht durch landschaftlichen Sprachgebrauch, sondern durch logische Erwägungen der Schriftsteller veranlaßt [...] Besonders hat

Rückert die Sprache zu korrigieren versucht [...] Auch Adelung hält bei *hören* das Part. für die regelmäßigere, edlere Form.”⁹

Thus, it does not come out as a surprise that for such a quirky feature like the IPP simplification strategies, which are particularly strong in the case of language contact, might have been at work.

Finally, traces of the bounded nature of the German past participle can still be observed today. In fact, if we try to embed an AcI-governing past participle into a noun phrase, an ungrammatical result obtains:

- (18) a. **Der im Park schlafen gesehene Mann wurde verhaftet.*
the in:DEF park sleep:INF see:PSTPTCP man became arrested
b. *Luomo visto dormire nel parco venne arrestato.*
the-man see:PSTPTCP sleep:INF in:DEF park came arrested
“The man seen sleeping in the park was arrested.”

As testified by the Italian correspondent in (19b), the operation is theoretically conceivable, and in fact grammatical in a language like Italian in which such a telicity marker was never present. In MSG, however, traces of the telic nature of the prefixed past participle still provide an obstacle for the expansion of the AcI-construction: in fact, the past participle cannot govern an embedded predicate which has to be specified as unbounded without the help of the auxiliary *haben* that provides a second temporal interval for the governing predicate to be anchored at. As we have argued for above, the latter is only possible on condition that a non-telic form, namely the IPP, shows up.

Lastly, the picture sketched so far would be incomplete without adding a final word on the question of the deviant linearization. The following table summarizes the data collected by Schmid (2005) on the linearization of the constituents in the IPP in five West-Germanic languages when the second constituent is a modal:

Table 3. IPP constituent order in 5 varieties of West-Germanic

	MSG	SG	A	WF	B	D
modals		$V_1 V_2 V_3$ $V_1 V_3 V_2$ $V_3 V_1 V_2$	$?V_2 V_3 V_1$	$V_1 V_2 V_3$ $?V_2 V_3 V_1$	$V_1 V_2 V_3$	$V_1 V_2 V_3$

MSG = German; SG = Sankt Gallen German; A = Afrikaans; WF = West Flemish; B = Bernese German; D = Dutch

9. [Exceptional employment of the participle of the verbs mentioned above in the modern language is certainly not always due to regional usage, but to logical remarks of the authors ... In particular, Rückert attempted at improving the language ... And also Adelung considers the participle in the case of *hören* to be the more regular, noble form].

On the basis of what has been observed above, we may conclude that Dutch has retained the earlier word order, whereas the other West-Germanic languages underwent minor changes. At any rate, none of the five varieties displays a complete head-final linearization. Notice that for MSG the reordering of the constituents goes back to the 18th century (cf. Härd 1981). To account for the persistence of the anomaly, it might be hypothesized that the “abnormal” word order was functionally adequate to encode the repair effect of the default-infinitive. In this regard, recall that a similar deviant linearization is attested for the future periphrasis as well in MSG, as shown in (16) above. The latter also results from the default extension of the infinitive in the place of an older construction containing the present participle (cf. Kotin 2003).

Whatever the reason for the persistence of deviant linearization might be, a common developmental pattern may be observed. Except for the conservative order occurring in Dutch, in the other West-Germanic languages a slow process of reordering has taken place, which aimed at remodeling the verb serialization on the basis of the dominant verb-final pattern, namely either $V_2V_3V_1$, in which the finite verb shifts to the end of the verbal complex, or $V_1V_3V_2$, in which the non-finite verbs are inverted consistently with the verb-final pattern. In other words, we observe a conflict between the tendency towards a uniform verb-final serialization pattern and the functionally useful coding of the anomaly. Notice that this explanation copes well with the fact that the theoretically conceivable reordering $V_2V_1V_3$ does not occur in any West-Germanic variety displaying IPP (cf. Ijbema 1997: 148), because it doesn't match either of the two strategies suggested above.

Furthermore, a number of grammatical and extra-grammatical factors have presumably contributed to making the picture intricate, as insightfully commented by Ebert (1986: 122):

“Die für die Ausdrucksmöglichkeiten des Deutschen relativ unbedeutende Entwicklung der Stellung des finiten Verbs im Verbalkomplex gehört zu den schönsten Beispielen des Zusammenwirkens von sprachlichen und außersprachlichen Faktoren bei der syntaktischen Variation und dem Syntaxwandel in unserem Zeitraum”.¹⁰

At any rate, whether the suggestions regarding the constituent linearization laid down here are correct or not must be left as an open question for future research,

10. [The development of the position of the finite verb in the verbal complex, which is quite irrelevant for the expressive possibilities of German, is one of the most beautiful examples of the interaction of linguistic and extra-linguistic factors in syntactic variation and syntactic change in our time span].

which has to be studied in connection with the general development of the *Satzklammer* in West-Germanic.

5. Conclusion

To sum up, grammaticalization may have therapeutic and pathological effects on morphology. Pathological effects have been considered in this paper with regard either to the occurrence of a morpheme in a wrong place, as is the case for introflexion in Latin and “trapped” morphemes in Norwegian, or to an unexpected form, as is the case for the perfect periphrasis in the Russian dialects and for the West-Germanic IPP. The latter is a particularly tricky case, in which the pathological side-effect of the grammaticalization of the perfect periphrasis is responsible for the synchronic mismatch. Because of the telic value of the prefix *ge-*, which was independently grammaticalized as an additive marker in the past participle, the *AcI*-verbs could not easily be target of the grammaticalization wave spreading the perfect periphrasis throughout all the verb sets of MHG. To overcome the semantic incompatibility, the arguably default form came in, namely the infinitive, which assured the complete diffusion of the perfect periphrasis at the cost of a form/meaning mismatch. A careful reconstruction based on the historical evidence available allowed us to detect the invisible but far-reaching effects of grammaticalization, which lurk behind the synchronic mismatch. Grammaticalization qualifies as a powerful conceptual tool for explaining quirky (morphological) features manifested by the natural languages all over the world.

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